A GUIDE FOR YOUNG SKEPTICS

Maybe Yes, Maybe No

by Dan Barker

Illustrated by

Brian Strassburg

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For Sabrina Delata

A Note to Parents

Maybe Yes, Maybe No might well be the most important book you can give a child. In today's media-flooded world, there is no way to be aware of —let alone control—all of the information, claims, and enticements that reach young people. The best thing to do is arm them with the sword of critical thinking.

Children need to be taught to develop their own minds at an early age so that a foundation of self-confidence and self-reliance grows with them as they mature. Allowing children to be curious, teaching them to ask questions, and motivating them to figure things out for themselves will enable them to thrive in all areas of life.

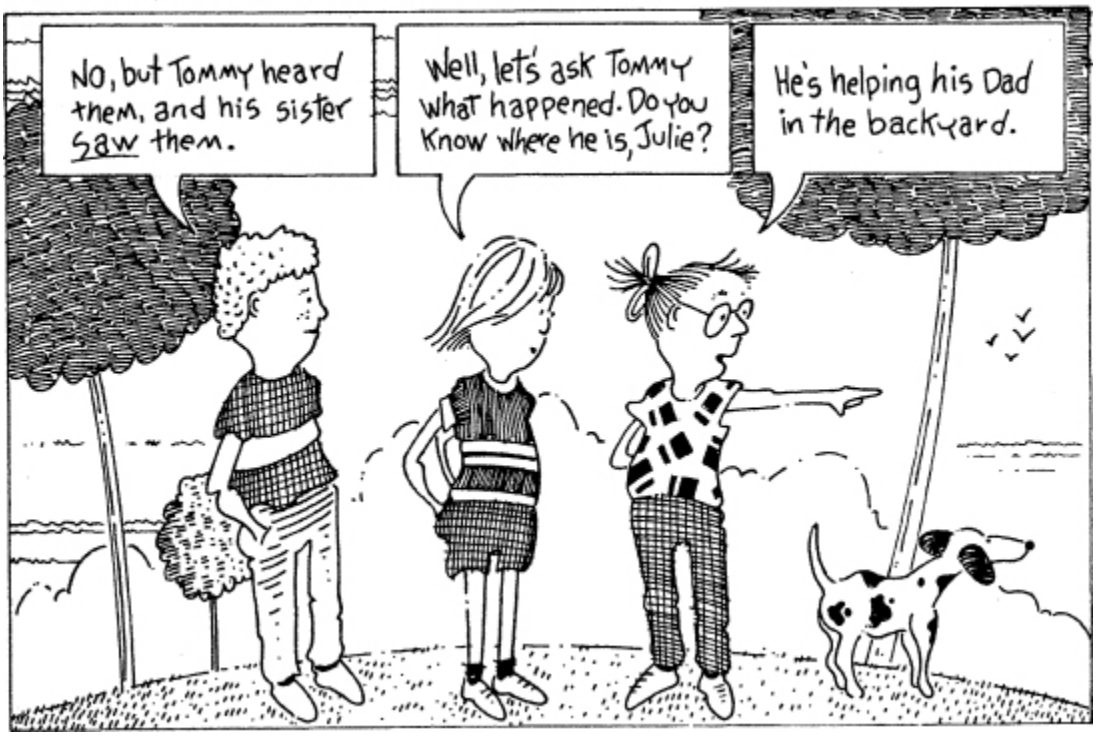
Maybe Yes, Maybe No does just this. By following Andrea's story, young readers learn how to go about solving a mystery, not by accepting unreasonable or superstitious explanations, but by asking questions, discovering facts, and thinking critically. This book outlines the scientific method in nontechnical language for our children to learn and utilize every day. And just as important, this book will encourage your child to delight in the rewards that thinking skeptically brings.

This is Andrea.
Andrea is a **skeptic.**

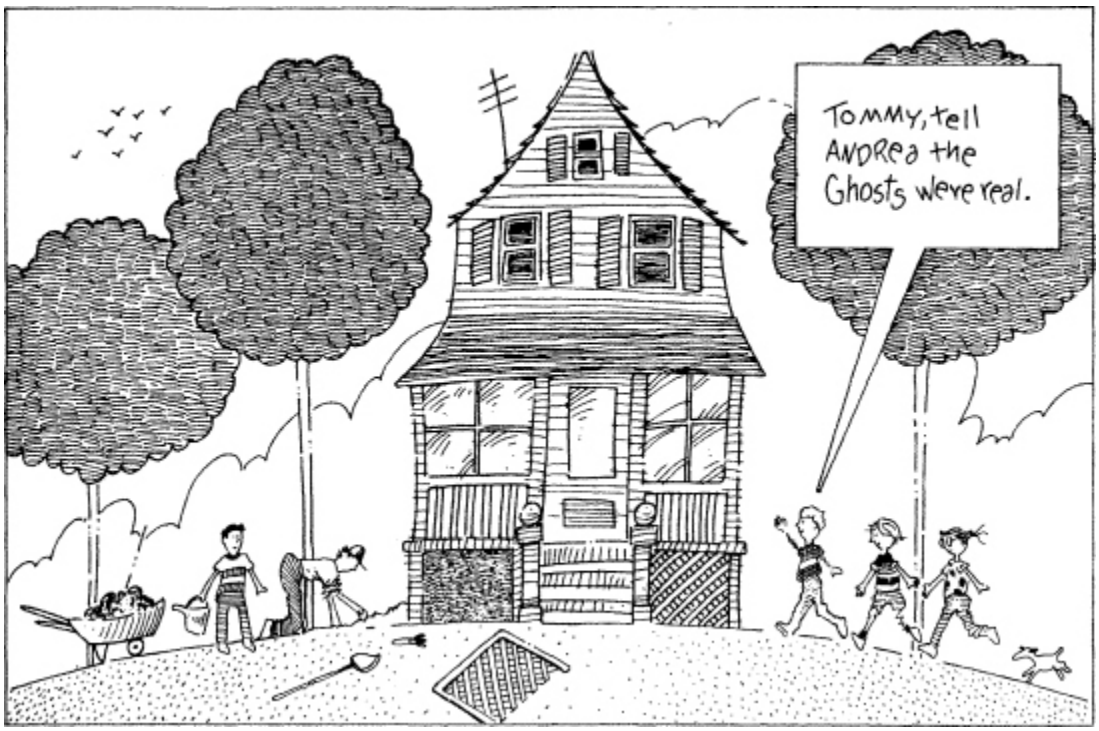
A skeptic is a thinking person.
A skeptic is a person with an open mind.

Before deciding if something is true or false,
a skeptic looks for **proof**.
Proof is what you have when you check something out
to learn if it is really true.

Skeptics don't believe everything they hear.
Since Andrea is a skeptic, she wants to
check it out for herself.



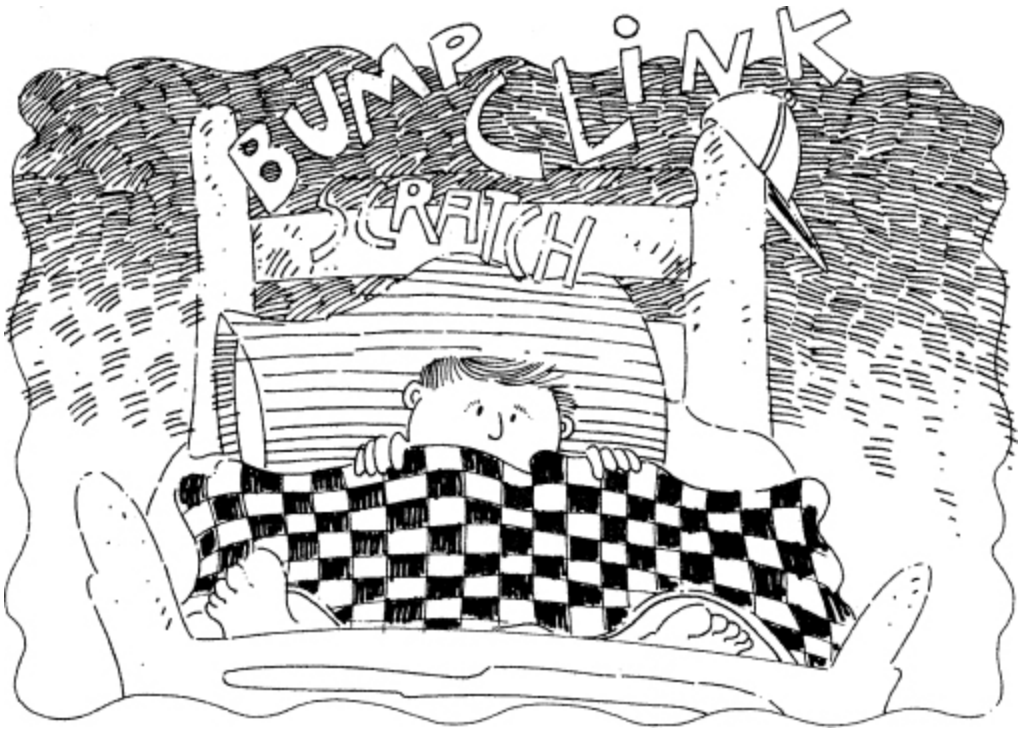
Andrea thinks you should prove a strange story
before you believe it.


Tommy, tell Andrea the Ghosts were real.

Skeptics listen carefully.

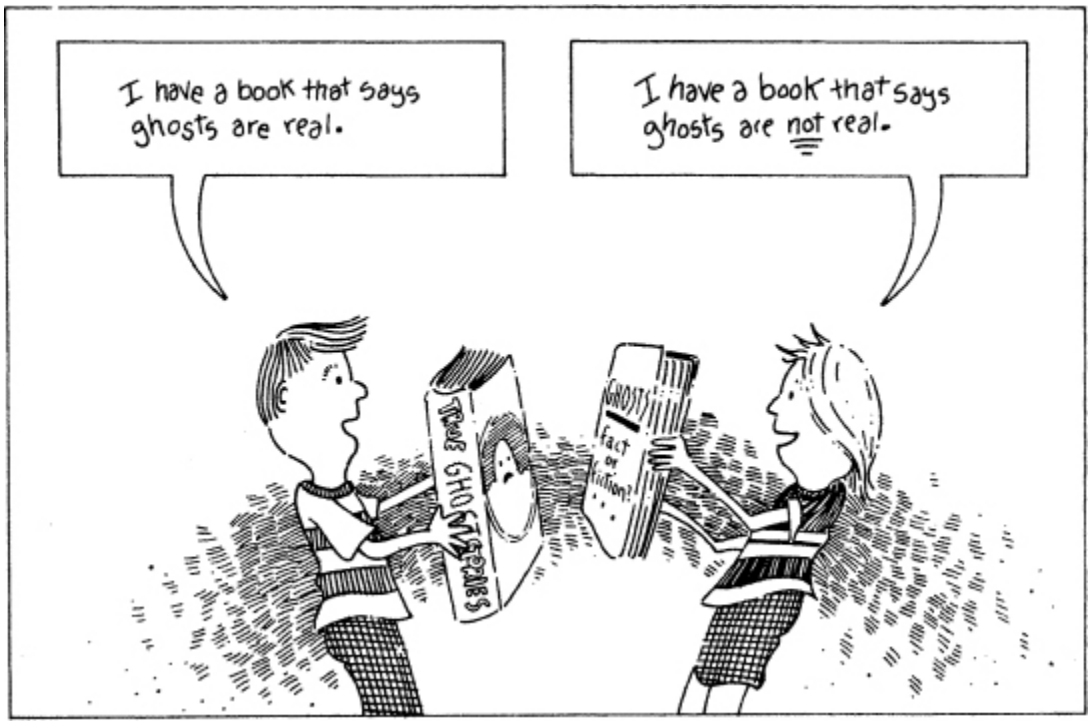
Andrea is always asking questions.

Tommy said he thought he heard noises
when he was asleep.



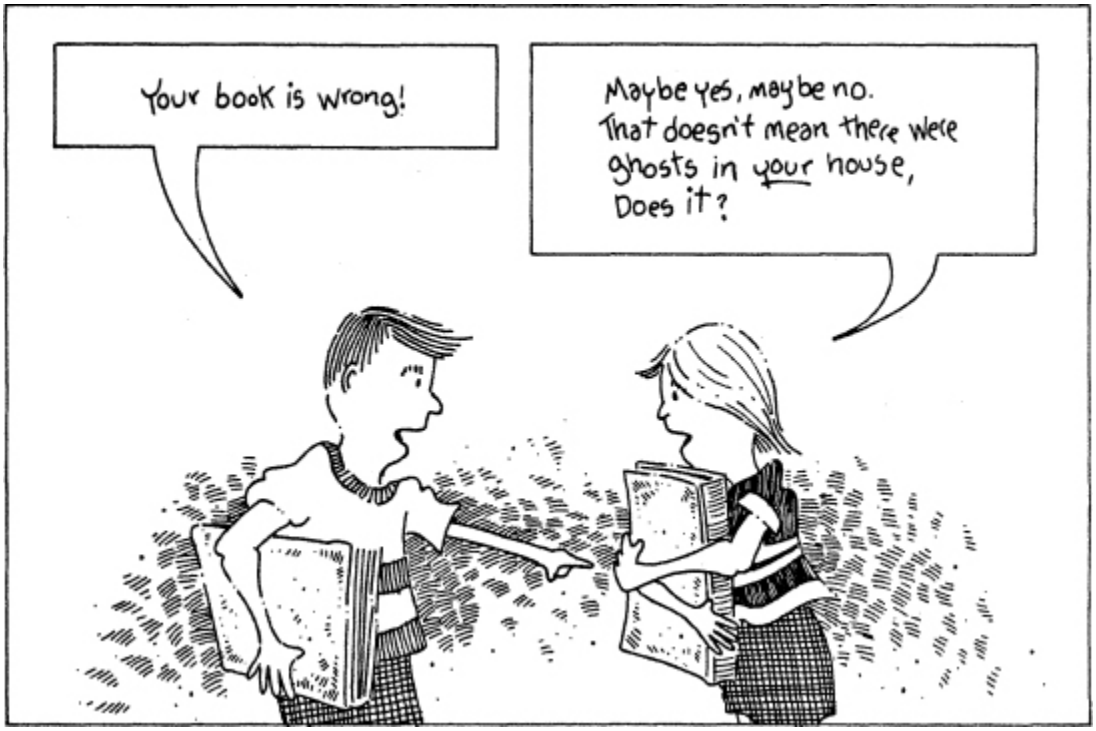
Skeptics want **clear** answers.
Skeptics want answers that make sense.

Skeptics usually try to find a simple way
to explain a crazy story.

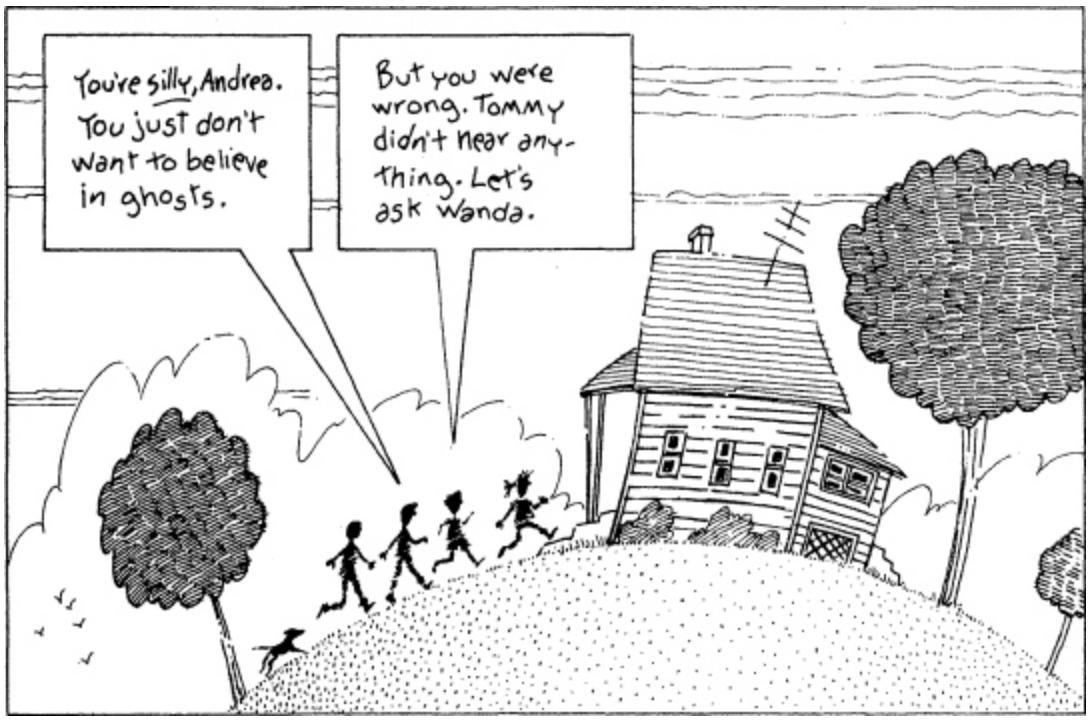

I have a book that says ghosts are real.
I have a book that says ghosts are not real.
TRUE GHOST STORIES
GHOSTS
fact or fiction?

Andrea knows that books are a good way
to learn something.
But sometimes books are wrong.

If the books disagree, and if people disagree,
you should try to check it out for yourself.

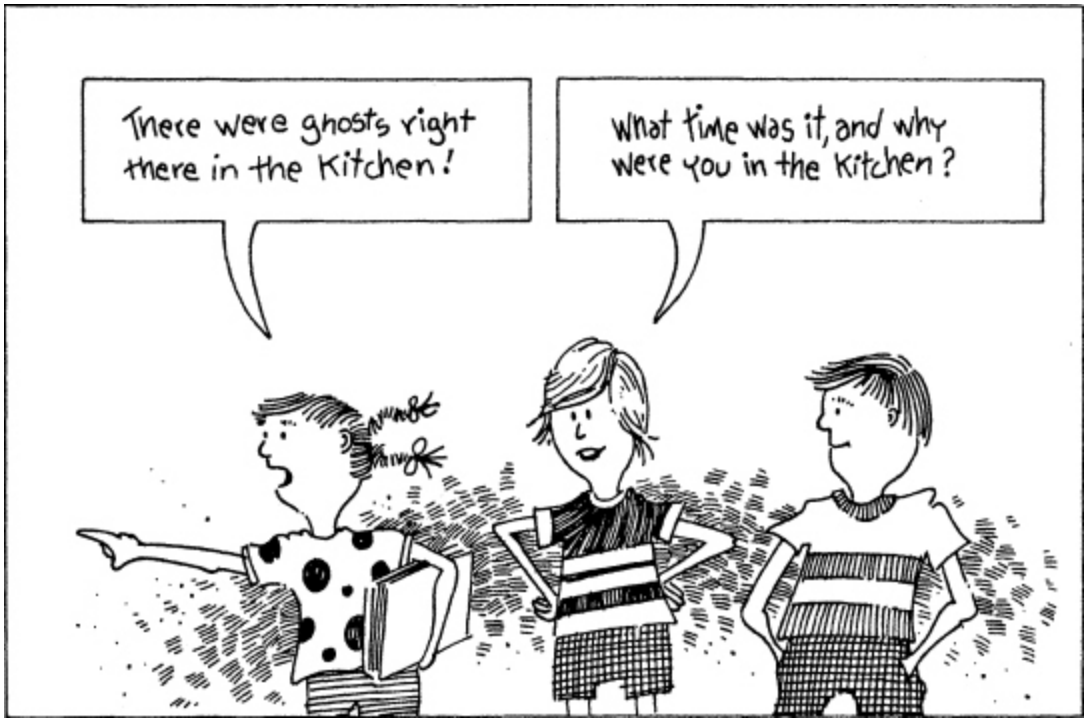


It doesn't bother Andrea when
her friends call her names.



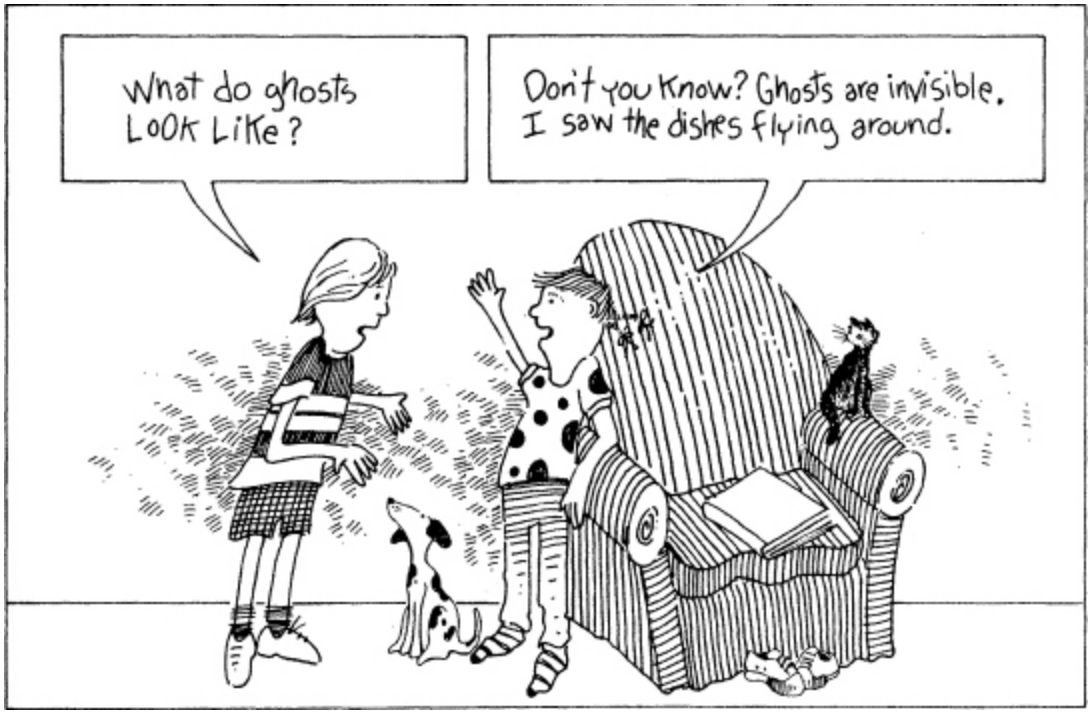

Wanda, tell Andrea about the ghosts.

Andrea always wants to know the whole story.



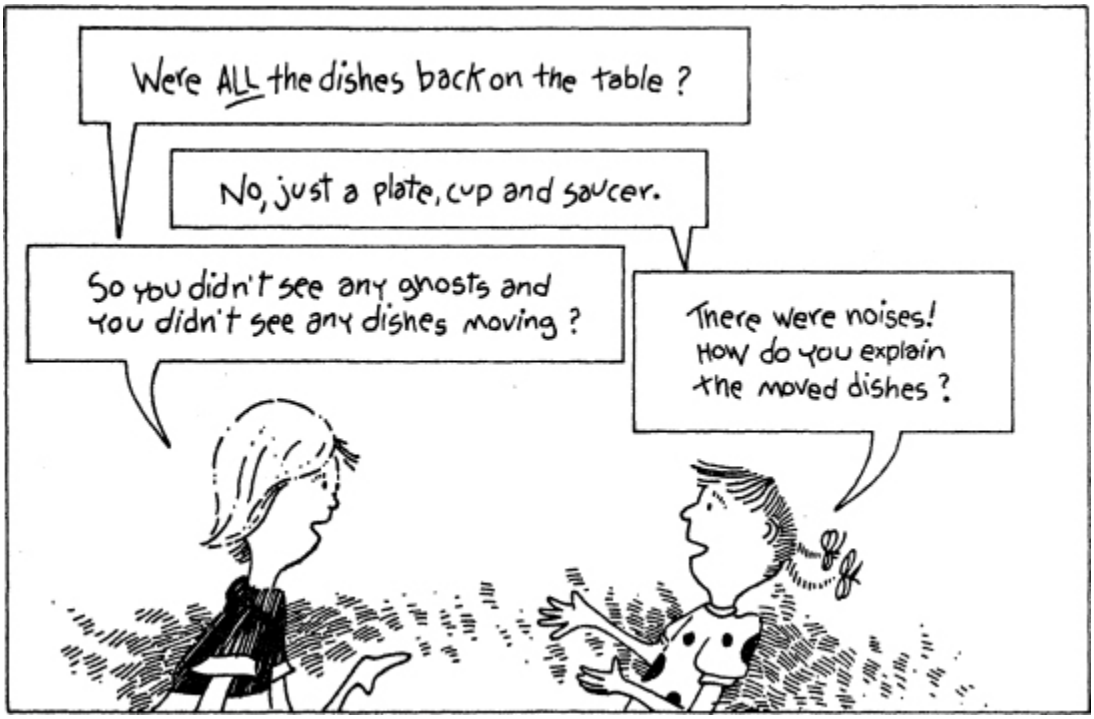
Andrea pays attention to what people say.

Skeptics are very curious.

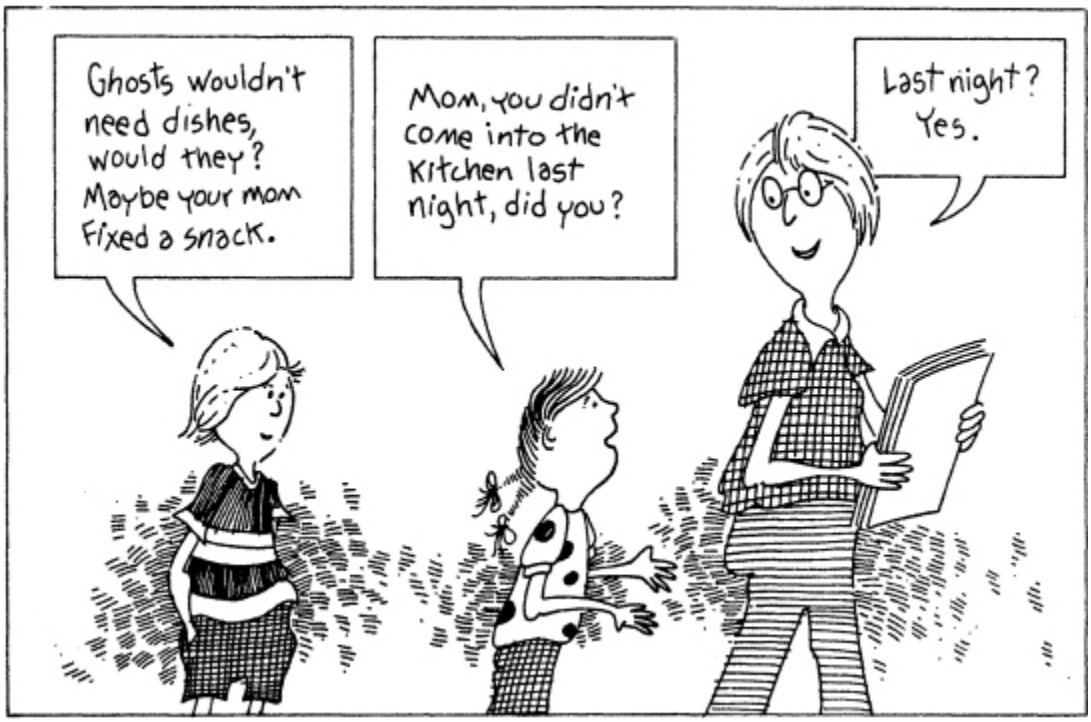



So you didn't see any ghosts, Wanda?
Dishes don't fly around by themselves do they?
Did the dishes break? That would have waked everyone up.
No, uh.... I think they were just sliding across the counter.

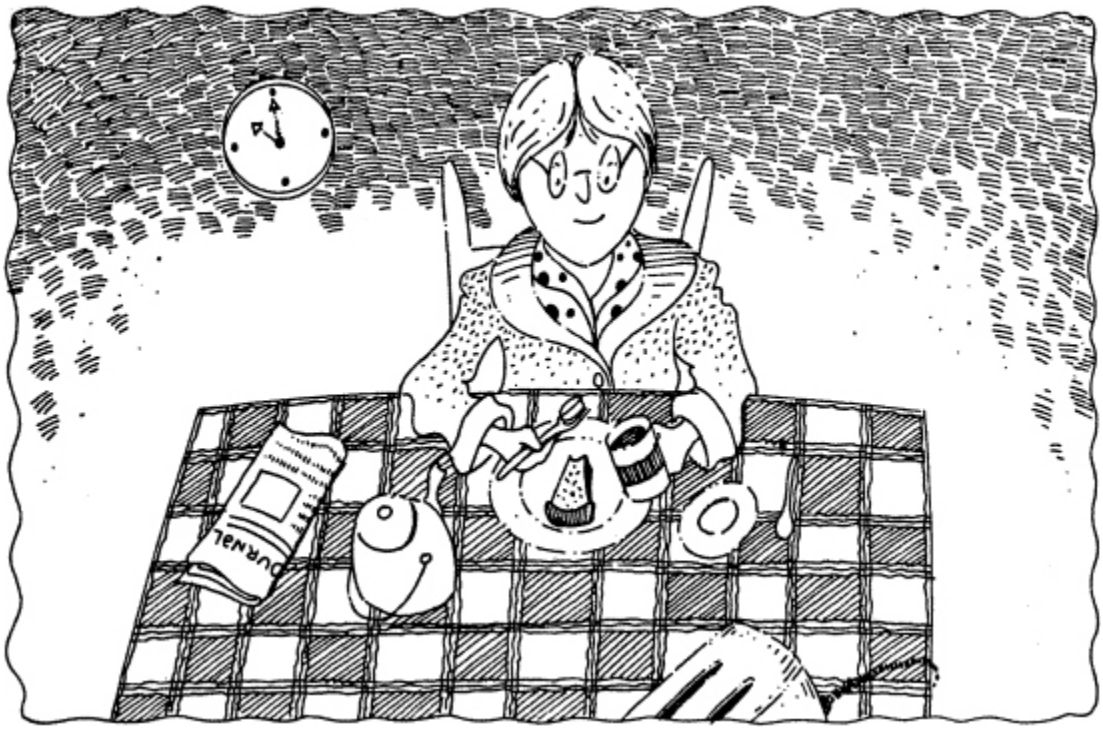

Now you are changing the story. Are you sure you saw something?
Well they must have moved. Yesterday I washed all the dishes, but at midnight they were back on the table.

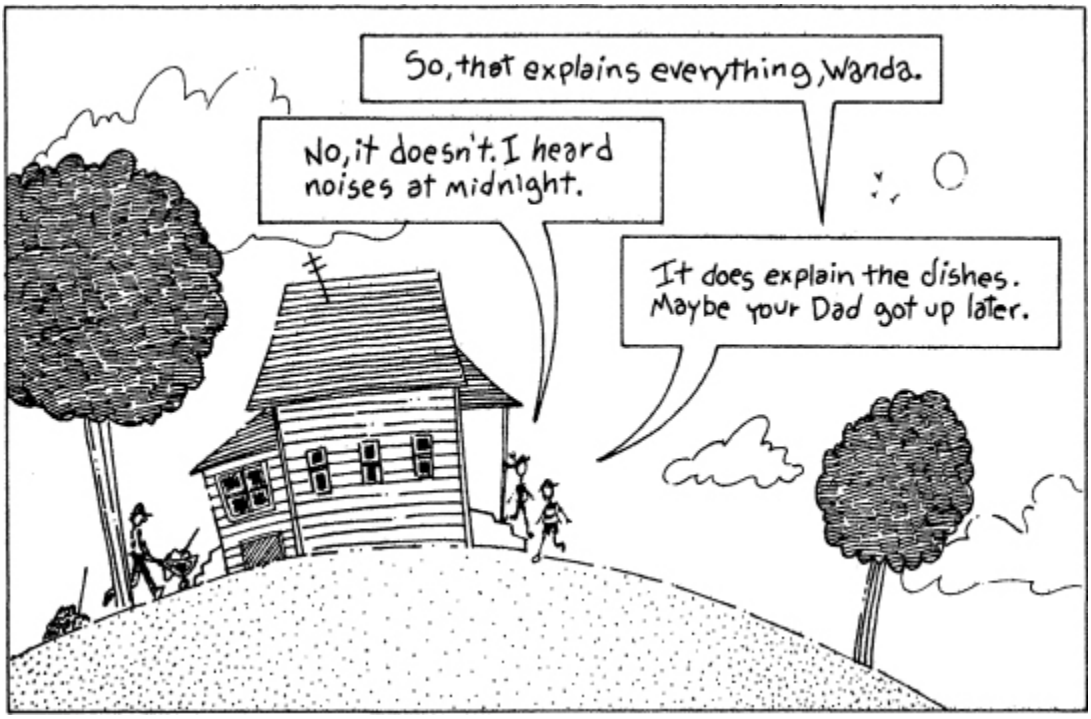

Were ALL the dishes back on the table ?
No, just a plate, cup and saucer.
So you didn't see any ghosts and you didn't see any dishes moving ?
There were noises! How do you explain the moved dishes ?

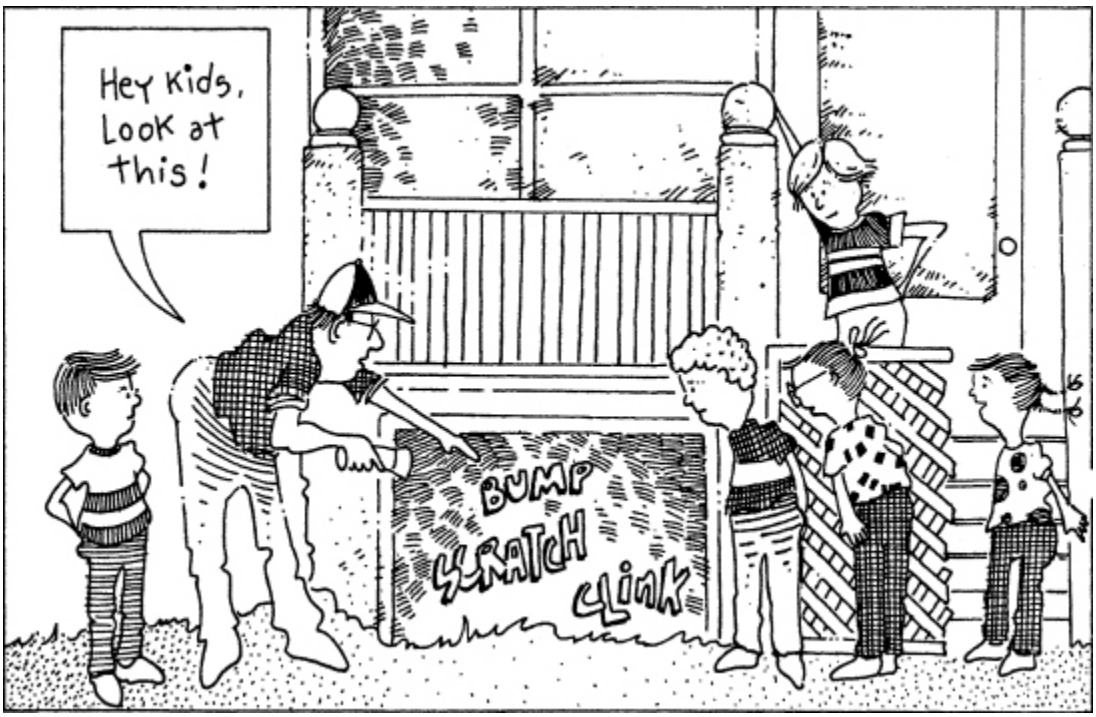
Skeptics always try to find a better explanation.

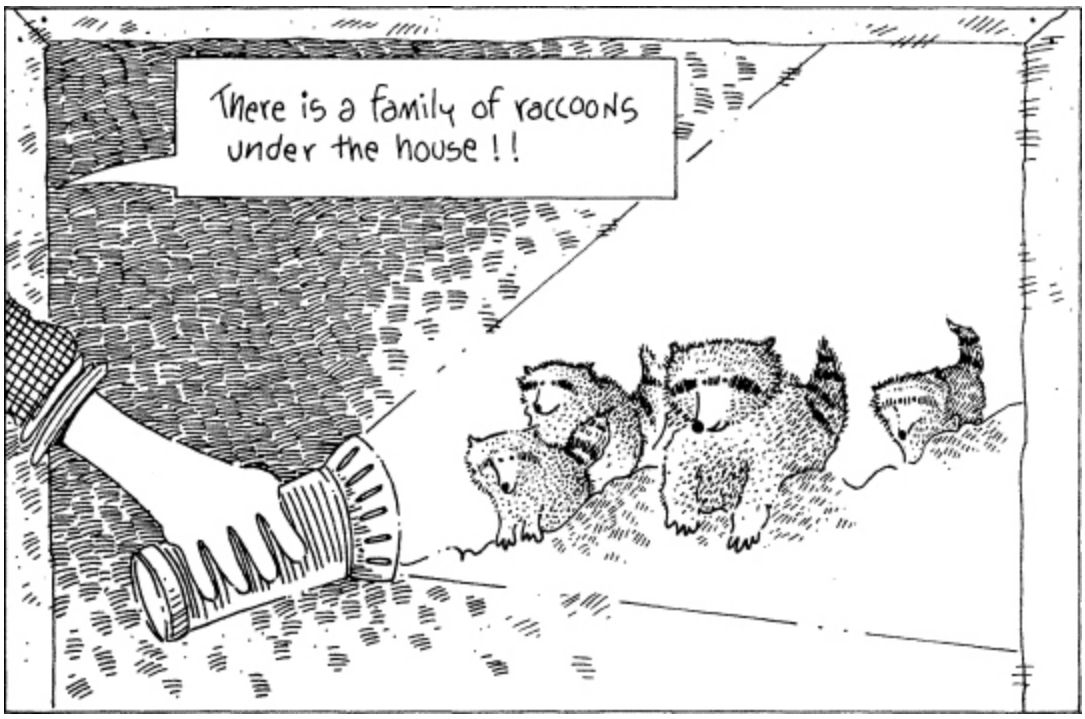


Wanda's mother said that she had some
tea and pie at 10:00, before she went to bed.




So, that explains everything, Wanda.
No, it doesn't. I heard noises at midnight.
It does explain the dishes. Maybe your Dad got up later.


Hey kids, Look at this!
BUMP
SCRATCH
CLINK

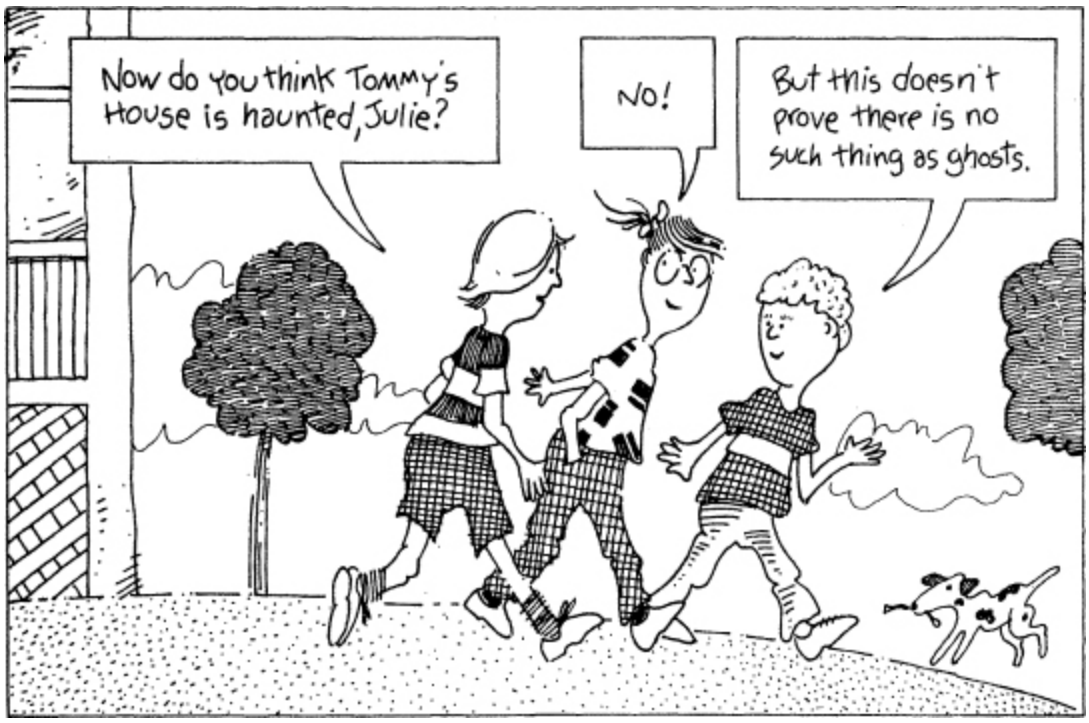

There is a family of raccoons under the house!!


We moved the trellis yesterday.
They must have gone under last night.

Skeptics always try to notice
the explanation to a mystery.

Some people are honest enough to admit a mistake
and change their mind.

Some people are not.


Now do you think Tommy's House is haunted, Julie?
No!
But this doesn't prove there is no such thing as ghosts.


Maybe Yes, Maybe NO.

What do **you** think?
Do you believe in ghosts?

Ghosts are not the only things skeptics don't believe in. Skeptics say there is not enough proof for flying saucers. Flying saucers are usually called UFOs—Unidentified Flying Objects.

Most UFO stories don't make sense.
Some of the stories are tricks to fool people.

What do **you** think?

Some people say they can do magical things
with their minds, using a special power to
learn or see things that other people can't see.
This is called ESP—Extra Sensory Perception.

Or they can read another person's mind—Telepathy.
Or they can move things with their minds—Telekinesis.
Or they can predict the future—Prophecy.
Or they can leave their body and travel far away—
Out of Body Experience.

People try to do many strange things with their minds,
but skeptics say there is not enough proof.

What do **you** think?

Some people say they can find water by
pointing a stick at the ground—Dowsing.
Or they can float in the air—Levitation.
Or they can tell the future by looking at the stars—
Astrology and Horoscopes.
Or they can cure sickness by magic or prayer—
Faith Healing.

But skeptics do not believe because
there is not enough proof.

What do **you** think?

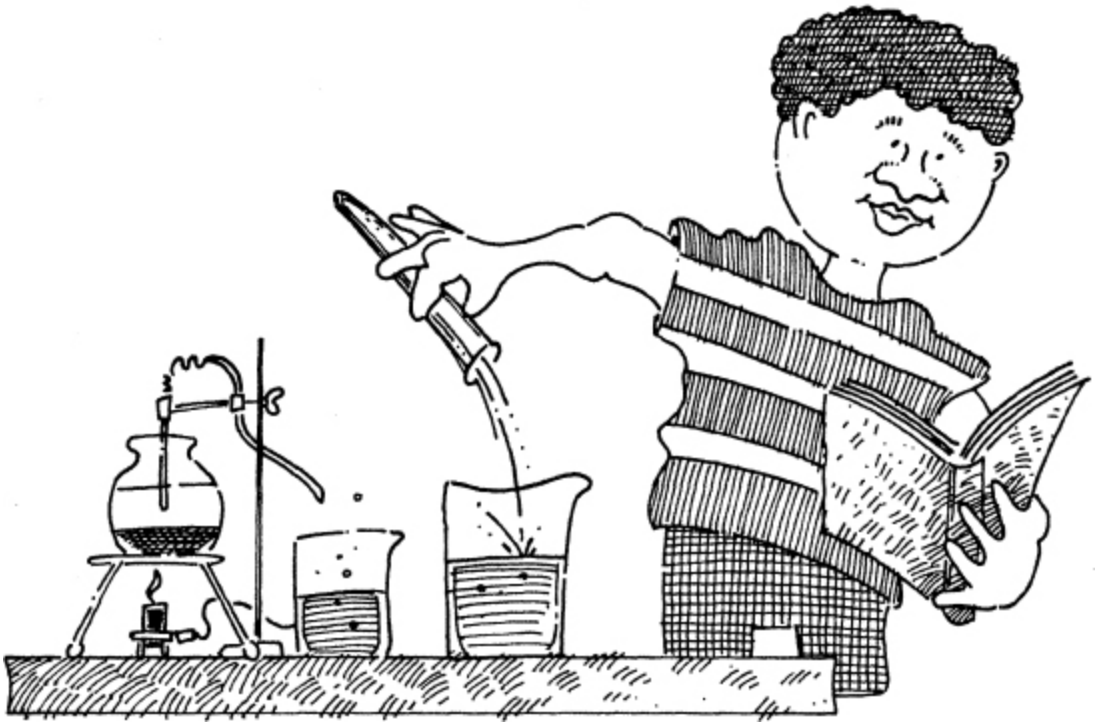
Skeptics do not believe in miracles.
A miracle is something that breaks the rules of nature.
Since the laws of nature never change,
a miracle is something impossible.
Most religions tell miracle stories,
like stories about animals that speak human language.
Or sticks that turn into snakes.
Or people who disappear before your eyes
and then come back out of thin air.
Some religions teach that you can pray to a god
and get what you pray for.

Some religions teach that there is an invisible world
with strange creatures like angels, demons, ghosts,
and dead people.
Some religions teach that storms are caused
by gods or devils.
Or that gods or devils cause sickness, fires,
earthquakes, floods, plant growth, and animal growth.
But skeptics try to explain these things without
ignoring the rules of nature.
Some people used to think that lightning was caused
by an angry god.
But now we know that lightning is electricity.

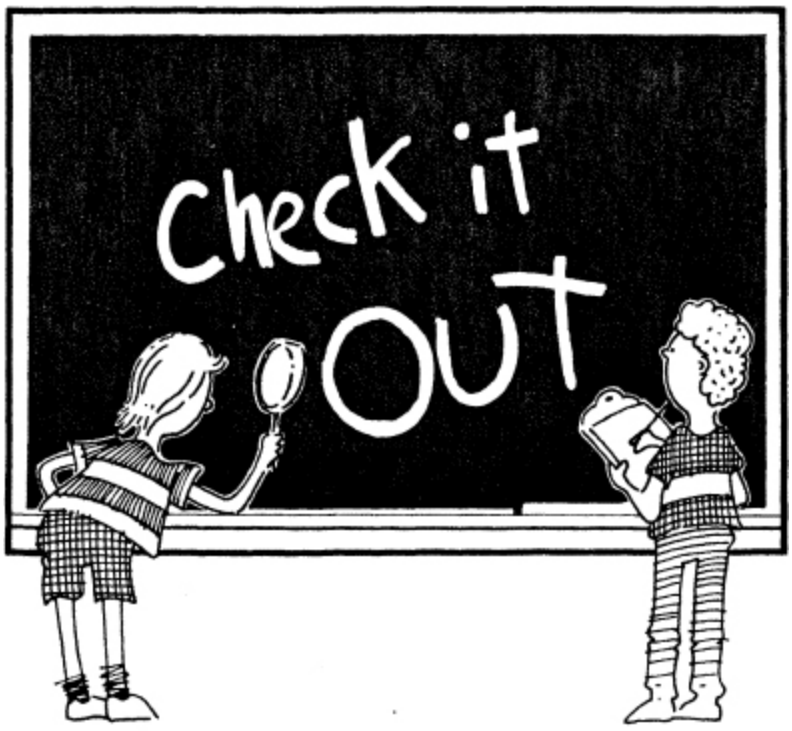
Science is the way we learn about the world.
Scientists are people who try to know
what is true or false about nature.

Not everybody can have a job as a scientist.
But everybody can use science.

To be a **good** scientist you have to be
very careful to follow certain rules.



The first rule of science is:



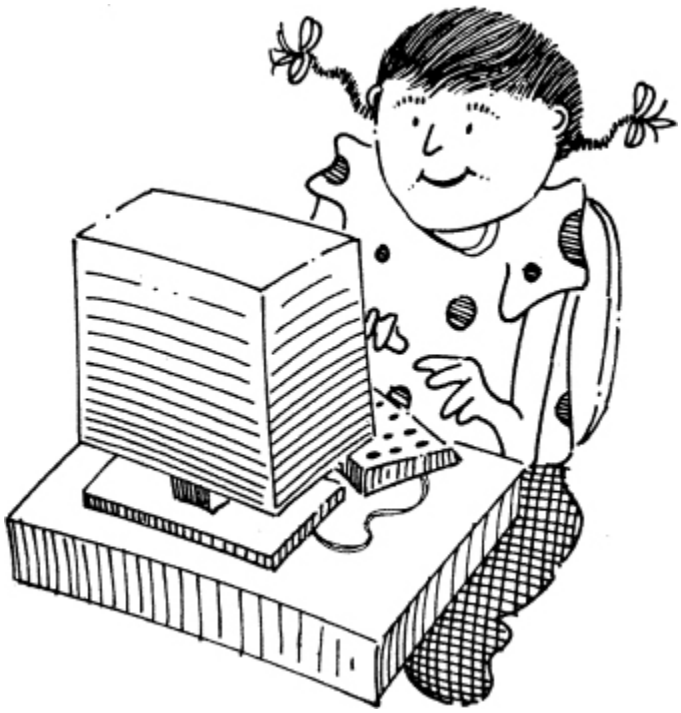
Don't just believe what you hear or read.
If something is true, you should be able to
check it out for yourself.

If you, or other people, are not able to check it out,
then how do you know if it is true?

There are many different ways to check things out.
Asking questions is one good way to check things out.
Andrea learned about the ghost story
by asking questions.

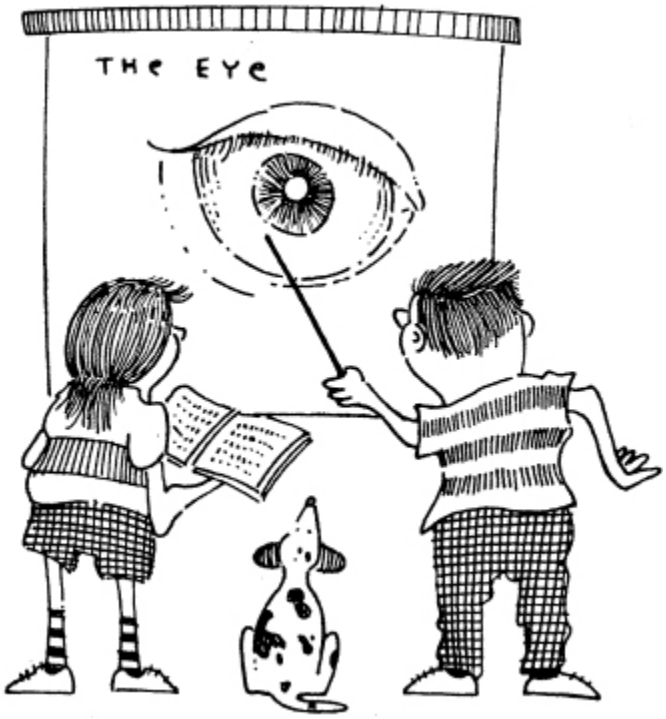
Besides asking questions, scientists have
special tools for checking things out.
Some of the tools are telescopes, microscopes, radar,
sonar, thermometers, and magnifying glasses.

Computers and books are also
good ways to check things out.



But even if you don't have special tools,
you do have your own eyes and ears.

Your body is a scientific tool that can
see, hear, smell, taste, and feel.



It is a good idea to try to find
more than one way to check things out.
For example, if one person told you
that they saw something, then it might be true.
Or it might not be true.
But if two or more people said they saw
the same thing, then isn't that better?

Still, even if a million people say something is true,
you should try to check it out for yourself.

A good scientist is like a detective.
What other ways can you think of to check things out?
You could look for footprints or fingerprints.
You could ask an expert for help.
You could look at photographs.
You could listen to recordings.

Can you think of other ways to CHECK IT OUT?

Another rule of science is this:

If you check it out once,
you should be able to check it out again.
If you do a test or experiment,
you should be able to repeat it.

If you can't repeat the test, then there is
no way to be really sure if it is true or false.

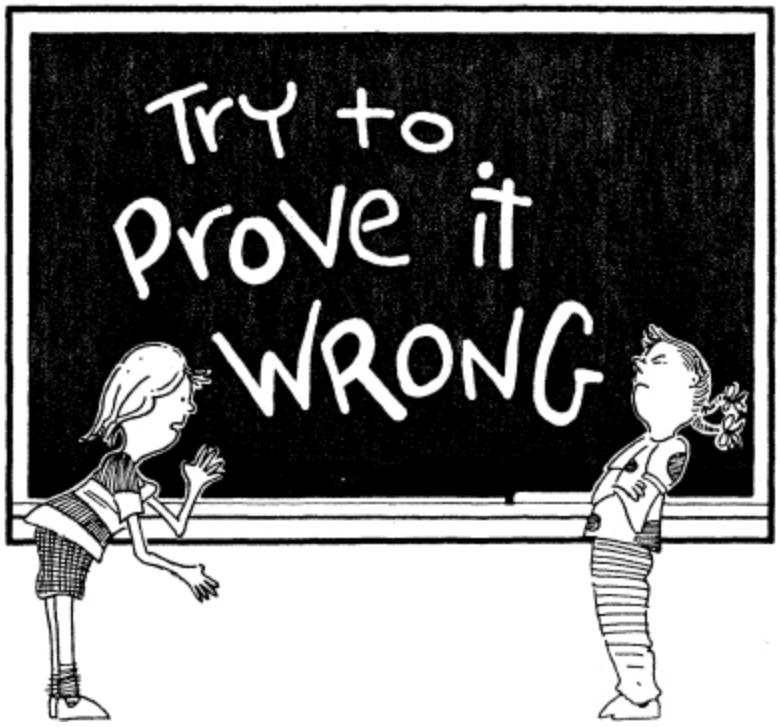
For example, if someone says they predicted the future,
ask them to do it again.
Maybe they could be lucky and
guess the future once in a while.

But if they can't repeat it again and again,
then there is no way to prove it is true.

If someone says they made something float
with their mind, ask them to do it again.
If someone says they healed a sickness with magic
or with prayer, ask them to do it again.

If something is really true,
you should be able to repeat it again and again.

Another rule of science is:



Don't just try to prove that something is true.
A good skeptic also tries to prove that it is false.

Think about this:
If something is TRUE,
that means it is NOT FALSE.

If you try to prove something false, and you fail,
then it is probably true.
If you can't think of any way to prove that something
is false, then there is no way to know if it is true.

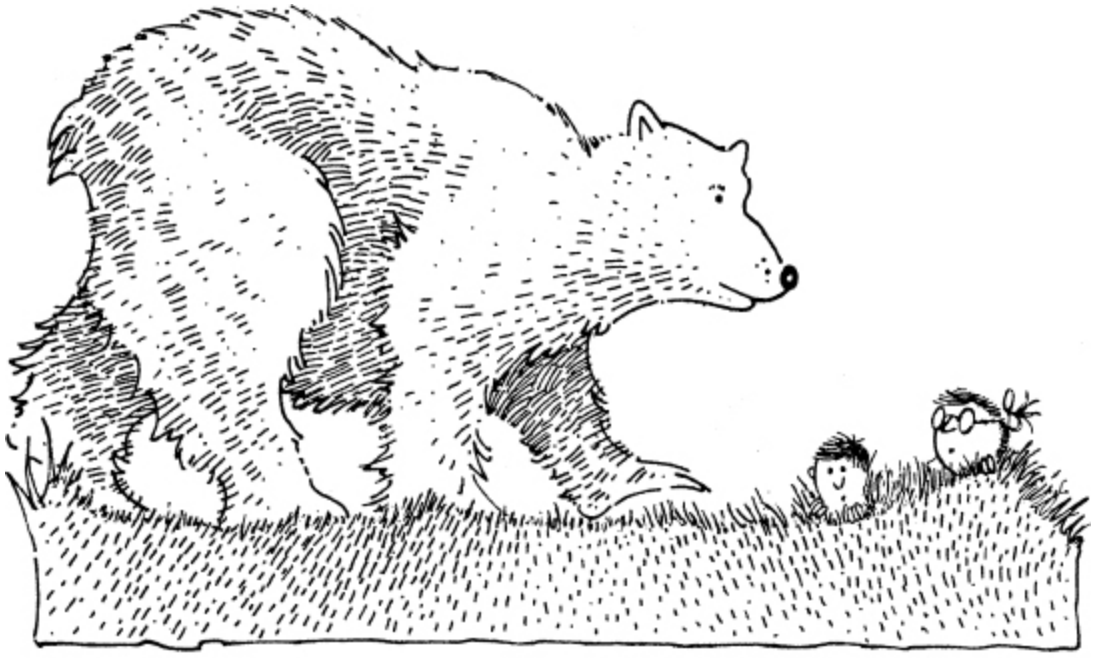
It is sometimes very hard to test if something is true.
It is usually easier to test if it is false.

For example, how could you prove that
all polar bears are white?

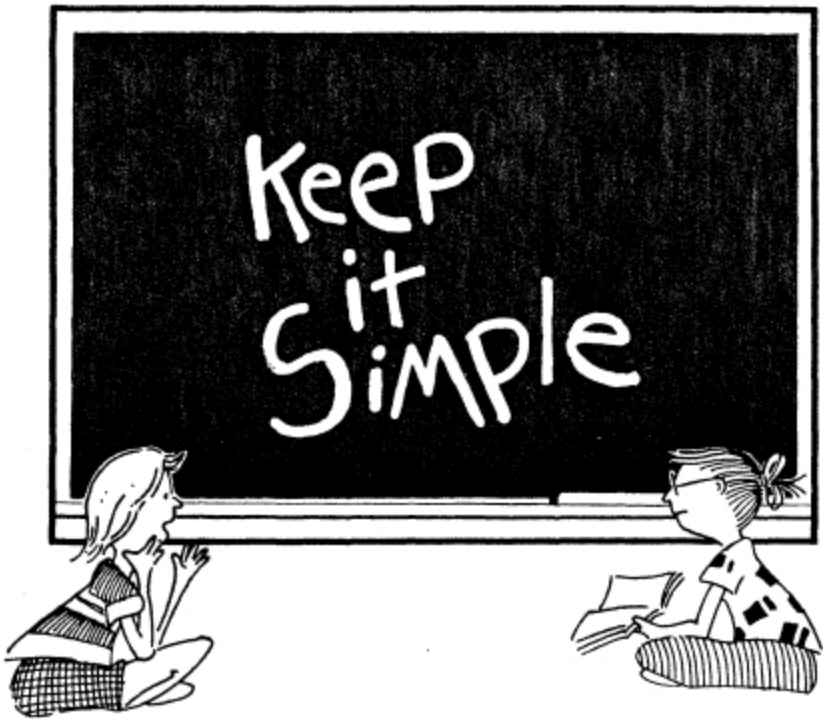
You would have to look at every single polar bear
in the whole world.
If you saw a thousand white polar bears, that still
would not prove that **all** polar bears are white.

But what if you saw just one **black** polar bear
or one **red** polar bear? Then you have proved that
not all polar bears are white.
If you can't find any polar bears that are **not** white, then you are helping to prove that
all polar bears **are** white. Think about it.

It may sound strange, but sometimes
the best way to prove that something is true
is to try to prove that it is false.



Another good rule of science is:



Sometimes there is more than one way
to try to explain something.
If one way is complicated and another way is simple,
scientists usually choose the simple way.

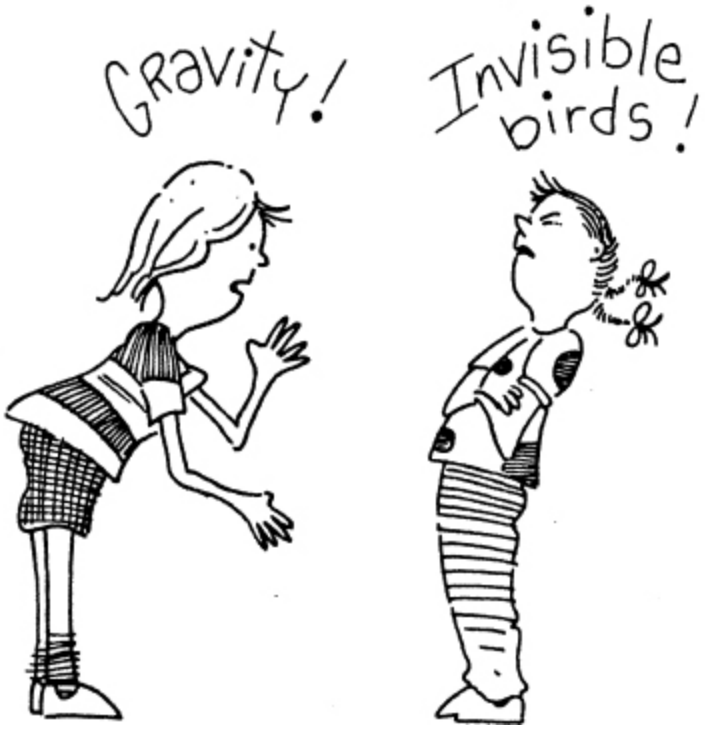
For example, why do things fall?
One way to explain it is with invisible birds that
push things to the ground when you let go of them.

Another way is to explain it with **gravity.**

If there **are** invisible birds,
then how do you know they are there?
Why can't you hear them?
Where do they live, and what do they eat?
Why do they only push things **down** and not **up**?
How many birds are there, and how do they know
when you are going to let go of something?
This explanation is not very simple.

Gravity is a simpler explanation.
Gravity means that everything
attracts toward everything else.
Since the earth is bigger than an apple,
the apple will fall down to the earth.
The earth also moves up to the apple a **very tiny** bit,
but you can't notice it.

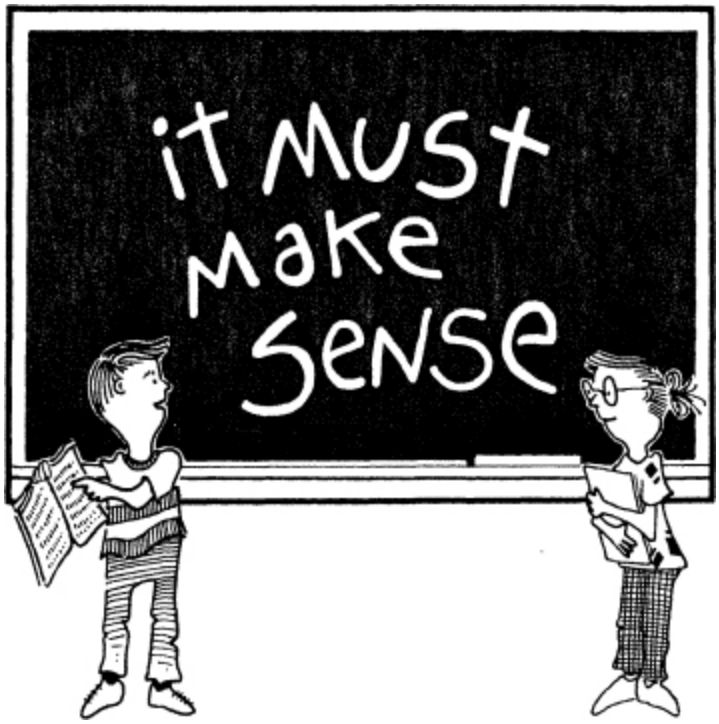
Which explanation do you choose:
gravity or invisible birds?



If someone wants you to believe something that seems
crazy, then maybe there is a simpler explanation.
Maybe they are mistaken.
Maybe they are exaggerating—making the story
bigger than it really was.
Maybe they are telling a lie.
Maybe they think they are telling the truth, but they
are just repeating somebody else's mistake or lie.
Maybe they haven't looked very hard
for a simpler explanation.

Or maybe it really is the truth, but you should always
check to see if there is a simpler answer first.

A very important rule of science is:



If something is true, then it should not be confusing.
It should be **logical.**
That means you should think about it very carefully
to see if it makes sense.

For example, if someone said the sun was
shining at night, does that make sense?
If the sun was shining, it could not be night.
If it was night, the sun could not be shining.

But a skeptic should always keep an open mind.
Is there any way that the sun **could** be
shining at night?

Maybe a huge mirror in outer space could
reflect the sun back around the earth.
Maybe the person was in a spaceship high above
the earth and could see both night and day.
But if there is no mirror, no spaceship,
or no other explanation, then does it make sense
to say that the sun was shining at night?

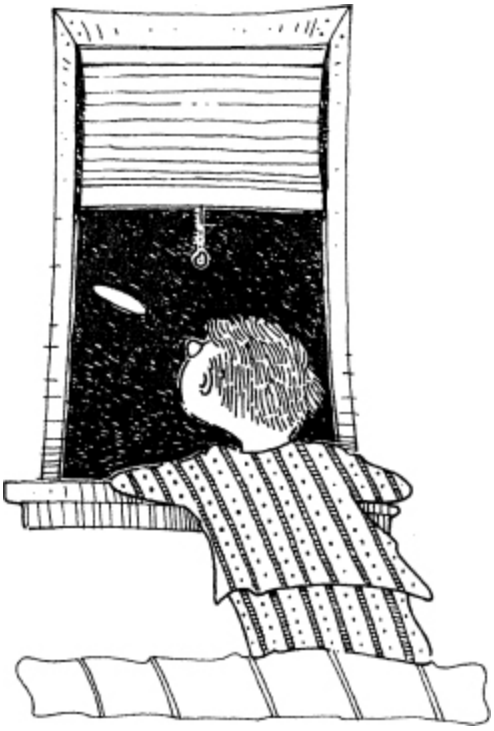
If something is true, then it must make sense.

A rule of science you should never break is:

Maybe you think you saw a flying saucer
outside your bedroom window.
Maybe the next day you told all your friends
that you saw creatures from outer space.

But what if you later learned that it was
just a frisbee on the roof?
Would you tell your friends the truth?
Would you admit that you were wrong?

Everybody makes mistakes, and good scientists
will admit their mistakes right away.

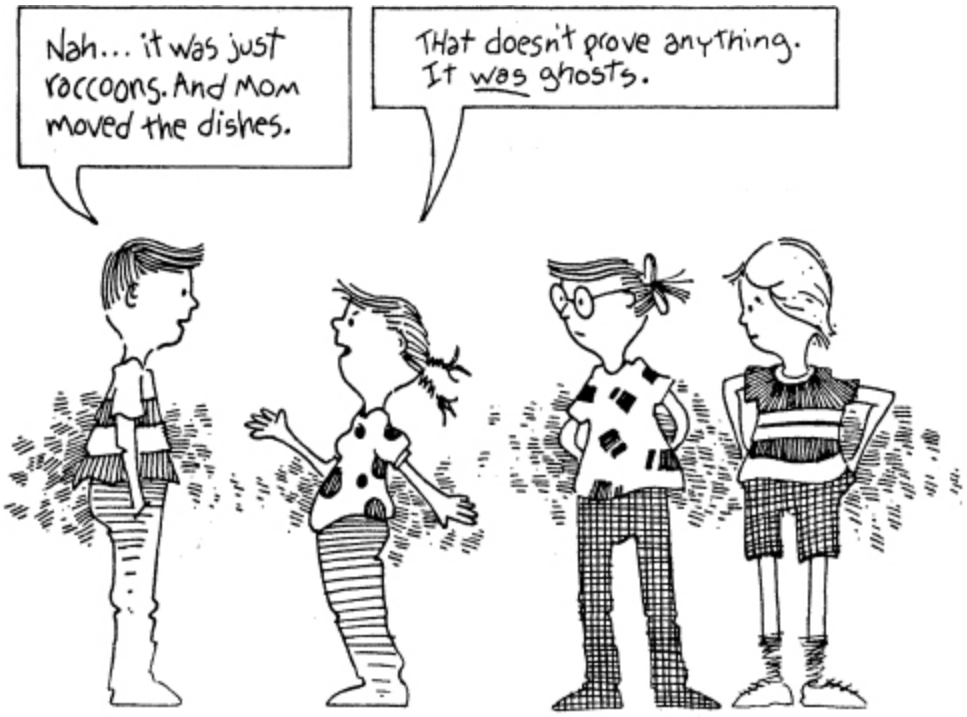


Sometimes people want to believe things,
so they just **think** they are true.
They haven't checked it out.
Or they haven't repeated the tests.
Or they ignore the tests that prove they are wrong.
Or they pretend that it makes sense
when it really doesn't make sense.
Or they make up lies to try to prove they are right.
But this is not honest.

Why are some people not honest?
Maybe because they like to feel special and important,
pretending to know things that no one else knows.
Or they are embarrassed to admit they were wrong.
Or they can make a lot of money tricking people.
Or their religion tells them
they are not allowed to change their mind.
Or they think they will lose their friends
if they are honest.
Or maybe they don't like what is really true,
so they make up something they like better.

People who are not honest
may never know what is true.
They don't care about learning if something is false.
They don't want to change their minds.

But an honest skeptic always wants to know
what is true or false, no matter what.
A good skeptic will keep an open mind.



Whenever you are trying to decide if something is
true or false, remember these rules of science:

CHECK IT OUT

DO IT AGAIN

TRY TO PROVE IT WRONG

KEEP IT SIMPLE

IT MUST MAKE SENSE

BE HONEST

Like Andrea, you have a very good mind.
Other people might tell you what to think,
and you should listen because they might be right.
But they might be wrong.
You have to decide for yourself what is true or false.
You don't have to hurry. You can do it your own way.

If you are a good skeptic, you will know how to
think for yourself.

The next time someone asks you to believe something,
will you say **Yes**?
Will you say **No**?
If you are really certain, and if you have followed
the rules of science, then it is okay to say Yes or No.

But if you are not certain, and if you have not yet
followed the rules of science, then it is okay to wait.
It is okay to say, “I don't know.”
If there is no proof, what will you say?